

LISTING OF THE CLAIMS:

The following is a complete listing of all the claims in the application, with an indication of the status of each.

- 1 1. (Currently Amended) A data processing device including:
2 a processor;
3 a charge storage device coupled to the processor;
4 a current source for supplying the processor with substantially constant
5 operating current at a level switchable among multiple nonzero current levels,
6 and adapted to switch the level of the vary its output operating current
7 independently of an instantaneous power demand of the processor by switching,
8 on at least one of a periodic and an aperiodic basis, among either periodically or
9 aperiodically between the multiple nonzero current levels.
- 1 2. (Currently Amended) The device of claim 1 wherein ~~in which~~ the charge
2 storage device comprises a capacitor in series with the current source, and
3 across which the processor is connected in parallel.
- 1 3. (Currently Amended) The device of claim 1 wherein ~~in which~~ the current
2 source is adapted to ~~periodically or aperiodically~~ switch between two different
3 nonzero current levels.

4. (Canceled)

1 5. (Currently Amended) The device of claim 3 ~~wherein in which~~ the current
2 source is adapted to determine the interval between switching current levels
3 based on ~~is determined by~~ an average power demand of the processor.

1 6. (Currently Amended) The device of claim 1 ~~wherein in which~~ the current
2 source further comprises:

3 a second current source adapted to provide a noise current, superposed on
4 the substantially constant current, that varies on at least one from among a
5 random and ~~or~~ pseudo-random basis.

1 7. (Currently Amended) The device of claim 1 further including a control means
2 for controlling the current source ~~adapted~~ to maintain the supply voltage to the
3 processor between an upper voltage limit and a lower voltage limit.

1 8. (Currently Amended) The device of claim 1 further including a zener diode
2 connected to the processor ~~adapted~~ to maintain the supply voltage to the
3 processor between an upper voltage limit and a lower voltage limit.

1 9. (Currently Amended) The device of claim 7 ~~wherein in which~~ the control
2 means includes a current switching means for switching the current source
3 between a first, higher current level and a second, lower current level, the
4 current level switching being triggered by the supply voltage to the processor
5 respectively reaching the lower voltage limit and the upper voltage limit.

1 10. (Original) The device of claim 9 further including a timer for determining a
2 time period taken for the processor supply voltage to reach a lower voltage limit
3 from an upper voltage limit, or vice versa.

1 11. (Currently Amended) The device of claim 10 wherein the timer determines
2 whether the time period falls outside predetermined limits, and further
3 including current setting means for varying at least one from among the first
4 current level and ~~and/or~~ the second current level of the current source if the
5 timer determines that the time period falls outside the predetermined limits.

1 12. (Currently Amended) The device of claim 11 wherein the predetermined
2 limits include a first predetermined threshold, and wherein in which the
3 current setting means raises the first current level if the timer determines that
4 the time period for reaching the lower voltage limit falls below the ~~the~~ first
5 predetermined threshold.

1 13. (Currently Amended) The device of claim 11 wherein the predetermined
2 limits include a second predetermined threshold, and wherein in which the
3 current setting means reduces the first current level if the timer determines
4 that the time period for reaching the lower voltage limit exceeds the ~~the~~ second
5 predetermined level.

1 14. (Currently Amended) The device of claim 11 wherein the predetermined
2 limits include a first predetermined threshold, and wherein in which the
3 current setting means reduces the second current level if the timer determines
4 that the time period for reaching the upper voltage limit exceeds the [[a]] first
5 predetermined level.

1 15. (Currently Amended) The device of claim 11 wherein the predetermined
2 limits include a second predetermined threshold, and wherein in which the
3 current setting means raises the second current level if the timer determines
4 that the time period for reaching the upper voltage limit exceeds the [[a]] second
5 predetermined level.

1 16. (Currently Amended) The device of claim 9 wherein in which the control
2 means includes means for temporarily inhibiting the current switching means if
3 the supply voltage to the processor fails to move towards the ~~desired~~ upper
4 voltage limit or the lower voltage limit.

1 17. (Currently Amended) The device of claim 1 wherein in which the processor
2 has an internal clock having a , the frequency that of which is dependent upon
3 the supply voltage to the processor.

1 18. (Currently Amended) The device of claim 1 wherein in which the processor
2 is a cryptographic processor.

1 19. (Currently Amended) The device of claim 1 further comprising a
2 ~~incorporated into~~ a smart card supporting the processor, the charge storage
3 device, and the current source.

1 20. (Currently Amended) A method of operating a data processing device having
2 a processor and a charge storage device connected to the processor, comprising
3 the steps of:

4 drawing a substantially constant current from an external power supply
5 at a level switchable among multiple nonzero levels; and

6 ~~utilizing the drawn current to cyclically apportioning the~~ [[a]]
7 substantially constant current flow from the current source between a charge
8 storage device and the [[a]] processor ~~within the data processing device,~~

9 wherein the step of cyclically apportioning the substantially constant
10 current flow switches the drawn current level that is periodically or
11 ~~aperiodically switched between the~~ multiple different nonzero substantially
12 constant current levels at one from among a periodic and aperiodic basis, the
13 switching being such that the drawn current varies independently of the
14 instantaneous power demand of the processor.

1 21. (Currently Amended) The method of claim 20 wherein ~~further including~~ the
2 step of ~~utilizing the drawn current to generate~~ cyclically apportioning a current
3 flow to the processor and the charge storage device switches the level of the

- 4 drawn current, that is periodically or aperiodically, ~~switched~~ between two
5 different nonzero substantially constant current levels.

22. (Canceled)

- 1 23. (Currently Amended) The method of claim 21 wherein ~~further including~~ the
2 step of cyclically apportioning a current flow includes determining the interval
3 between switching according to an average power demand of the processor.

- 1 24. (Currently Amended) The method of claim 20 wherein the step of cyclically
2 apportioning a substantially constant current flow utilizes a first current
3 source, and further including ~~the steps of~~:
4 utilizing a second current source to provide a superposed current that
5 varies on a random or pseudorandom basis and
6 delivering the combined current of the first and second current sources to
7 the processor and the charge storage device.

- 1 25. (Previously Presented) The method of any one of the claims 20, 21, 23, and
2 24 further including the step of maintaining a supply voltage to the processor
3 between an upper voltage limit and a lower voltage limit.

- 1 26. (Currently Amended) The method of claim 25 wherein ~~further including~~ the
2 step of cyclically apportioning a substantially constant current flow switches the
3 ~~switching a current~~ level source between a first, higher current level and a

- 4 second, lower, current level, when the supply voltage to the processor
5 respectively reaches the lower voltage limit and the higher voltage limit.

1 27. (Currently Amended) The method of claim 26 wherein the step of cyclically
2 apportioning a substantially constant current flow further includes including
3 the steps of:

- 4 determining a time period taken for the processor supply voltage to reach
5 a lower voltage limit from an upper voltage limit, or vice versa, and
6 varying the first current level and/or the second current level of the
7 current source if the time period falls outside predetermined limits.

1 28. (Currently Amended) The method of claim 27 wherein said step of varying
2 further includes including the step of raising the first current level if the time
3 period for reaching the lower voltage limit falls below a first predetermined
4 threshold.

1 29. (Currently Amended) The method of claim 27 wherein said step of varying
2 further includes including the step of reducing the first current level if the time
3 period for reaching the lower voltage limit exceeds a second predetermined
4 threshold.

1 30. (Currently Amended) The method of claim 27 wherein said step of varying
2 further includes including the step of reducing the second current level of the

- 3 time period for reaching the upper voltage limit falls below a first
4 predetermined threshold.

1 31. (Currently Amended) The method of claim 27 wherein said step of varying
2 further includes ~~including the step of~~ raising the second current level if the time
3 period for reaching the upper voltage limit exceeds a second predetermined
4 threshold.

1 32. (Currently Amended) The method of claim 26 further including the step of
2 temporarily inhibiting the current switching if the supply voltage to the
3 processor fails to move towards the ~~desired~~ upper voltage limit or the lower
4 voltage limit.

1 33. (Original) The method of claim 20 further including the step of controlling
2 the frequency of operation of the processor as a function of the supply voltage to
3 the processor.

34-35. (Canceled)

1 36. (Currently Amended) The method of claim 28 wherein said step of varying
2 further includes ~~including the step of~~ reducing the first current level if the time
3 period for reaching the lower voltage limit exceeds a second predetermined
4 threshold.